

Remarks/Arguments:

Claims 1-27 are pending in the above-identified application.

Claim 1 was rejected under 35 U.S.C. § 103 (a) as being unpatentable over Umezawa, Illif and Ishizuka. Claim 1 is amended to include,

... an output part which outputs to a user a question being selected based on the determined cause of image degradation determined by the cause determination part ...

Basis for these amendments may be found, for example, in the specification at page 24, lines 5-10, page 25, lines 3-10, page 28, lines 19-24 and page 30, lines 3-7.

Applicants' exemplary embodiment authenticates a user's eye by comparing a image of an eye with a previously stored image of the user's eye. The user is authenticated if parameters of the stored image match parameters of the current image. The authentication may not occur, however, if there is no match. That is, authentication may not occur if the current image becomes degraded. Applicants' exemplary embodiment lists different causes of image degradation. (Third column of Fig. 7). For example, the cause of image degradation may be determined to be that the user is wearing glasses. This cause of degradation due to the glasses may be "reflection of light from the glasses" or "the eye image is out of focus because the eyeglass frame is in focus." (Page 25, lines 3-10 and page 30, lines 3-7). Alternatively, the cause of degradation may be "reflection of an object off the cornea due to external light." (Page 24, lines 5-10).

After the cause of degradation is determined, a question is outputted to the user. (Page 28, lines 19-24). For example, the cause of degradation may be determined to be "reflection of an object off the cornea due to external light." Based on the determination, a question is selected to be outputted to the user. That is, the question is **"...selected based on the determined cause of image degradation,"** as recited in claim 1. If the user responds that he is wearing glasses, the cause is due to "reflection of light from the glasses" or "the eye image is out of focus because the eyeglass frame is in focus." Thus, a mismatch is determined between the determined cause of degradation and the answer to the question. A threshold for determining that the user is wearing glasses is changed so that the cause of degradation may be determined to be that the user is wearing glasses. (Page 30, lines 13-20).

The Examiner admits that Umezawa does not disclose outputting "questions" to a user. (Page 3, lines 7-8). Ishizuka also do not disclose outputting "questions" to a user. The Examiner argues that Illif discloses a user answering a predetermined question and determining whether a match occurs between the cause and the cause corresponding to the answer.

Illif discloses "...asking a patient a predetermined question, receiving an answer to the question from the patient, comparing the answer to a prestored expected answer..." (Col. 5, lines 36-39). The predetermined questions in Illif are based on answers to previous questions. The answers are not based on an evaluation process to determine a cause of image degradation. That is, the predetermined questions in Illif are not **"selected based on the determined cause of image degradation."** For example, Illif first asks a user what problem the user is suffering from. (Col. 35, lines 45-50). If the user answers that he is suffering from headaches, Illif presents a series of questions relating to headaches. More questions are presented to determine what kind of headache the user is suffering from. (Col. 36, line 54 to col. 42, line 48) Thus, the predetermined questions in Illif are not **"selected based on the determined cause of image degradation."** Thus, claim 1 is allowable over the art of record.

Claims 2-5, 7-15, 17-23 and 25-27 were rejected under 35 U.S.C. § 103 (a) as being obvious over a combination of references to Umezawa, Illif, Ishizuka, Uchida, Matsushita and Kondo. Claims 2-5, 7-15, 17-23 and 25-27 are allowable, however, because they depend from allowable claim 1.

Claim 6 was rejected under 35 U.S.C. § 103 (a) as being unpatentable over Umezawa and Kondo. Claim 6 is amended to include,

... a cause determination part which determines that a cause of image degradation of the image is reflection of an object **off the cornea** due to external light ... (Emphasis added).

Basis for these amendments may be found, for example, in the specification at page 17, lines 3-6 and page 24, lines 5-10.

As described above, the cause of degradation according to Applicants' exemplary embodiment may be "reflection of an object off the cornea due to external light." (Page 24, lines 5-10). For example, Applicants' exemplary embodiment discloses that the cause of image degradation may be that the eye image 60 contains reflection 63 of a landscape or the like off the cornea due to external light. (Page 17, lines 3-6).

In contrast, Umezawa does not disclose or suggest "...a cause of image degradation of the image is reflection of an object **off the cornea** due to external light," as recited in claim 6. Rather, Umezawa detects a "high brightness" area. (Paras. [0034] and [0035]). Applicants' claimed features of "...a cause of image degradation of the image is reflection of an object **off the cornea** due to external light..." may be advantageous over the prior art because an appropriate counter measure may be suggested, such as "photograph in the shade" to prevent reflection of an object **off the cornea** due to external light. (page 26, line 5). Kondo also does not disclose these features. Thus, claim 6 is allowable over the art of record.

Claims 16 and 24 were rejected under 35 U.S.C. § 103 (a) as being unpatentable over Umezawa, Kondo and Uchida. Claims 16 and 24 are allowable, however, because they depend from allowable claim 6.

In view of the foregoing amendments and remarks, Applicants submit that this Application is in condition for allowance which action is respectfully requested.

Respectfully submitted,

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